



Lifetime Achievement Recipients

The following members now fall under the Lifetime Achievement category which was approved May 29, 2009. They received the HFCIC designation before that date and will retain their HFCIC designation.

Howard Alper
Alfred Bader
Jean M. Bélanger
Clem W. Bowman
Arthur J. Carty
Howard C. Clark

Norman Epstein
Ron J. Gillespie
John C. Polanyi
William G. Schneider

CITATIONS

Howard Alper, HFCIC, O.C. was appointed chair of the Government of Canada's Science, Technology and Innovation Council. Canada's Minister of Industry, the Honourable Maxime Bernier, announced the creation of the Council on June 15, 2007. The Council provides the government with policy advice on science and technology issues and will produce regular national reports that measure Canada's science and technology performance against international standards of excellence. Alper is a respected member of the science community both internationally and domestically, and he brings extensive knowledge and expertise of science and technology issues to the Council. He has served as chair of the Board of Governors of the Council of Canadian Academies and on private sector boards. He is a full professor in the Department of Chemistry at the University of Ottawa and visiting executive at the International Development Research Centre. Alper is an Officer of the Order of Canada and has received a number of prestigious fellowships and major awards, including being the first recipient of the Gerhard Herzberg Canada Gold Medal for Science and Engineering

Alfred Bader, HFCIC, began his career in Canada at Queen's University in the Department of Chemistry, where he earned a BSc in engineering chemistry and an MSc in organic chemistry. Bader then went on to Harvard where he studied under Lois Fieser, the renowned organic chemist. He started his career as a research chemist with Pittsburgh Plate Glass Company and became group leader in the paint division, but his perception of the need to prepare high purity intermediate compounds led him to start his own venture. That modest beginning gave rise under Bader's nurturing to the Sigma-Aldrich Chemical Company, supplier of quality organic compounds the world over. Through this period Bader maintained a down-to-earth interest in chemistry. He is the author of the autobiographic work *Adventures of a Chemist Collector*. Bader has been a strong supporter of chemistry in this country. He founded the Alfred Bader Scholarships and the Alfred Bader Award in Organic Chemistry, administered by the CSC.

Jean Bélanger, HFCIC, O.C. has quite an extensive and impressive feuille de route and his achievements have been recognized both nationally and internationally. Bélanger graduated from the University of Ottawa in 1957 with a BAsC (chemical engineering), cum laude. He began his working career with Shell Canada at its Montréal East refinery . Bélanger then returned to Ottawa and joined the public service. Between 1962 and 1978, he assumed increasing responsibilities in trade and industrial policy, culminating in his appointment to the post of director general of Industrial Policy in 1971. In 1978, Bélanger was appointed director of defense, External and Cultural Affairs in the Programs Branch of the Treasury Board of Canada Secretariat. In 1979, Bélanger acceded to the position of president for the Canadian Chemical Producers' Association (CCPA). During his tenure, the CCPA introduced Responsible Care[®], an ethically based initiative that drives companies, with the personal commitment of their CEO, to handle safely products from initial conception to eventual disposal. This initiative has now been adopted by the chemical industry in over 50 countries throughout the world. For his role in the development of this initiative, he was named to the Global 500 Roll of Honour of the United Nations Environment Program in 1990. He has also been awarded the Environment Medal of the Society of Chemical Industry (U.K.), the Vanguard Award of the National Association of Chemical Distributors (U.S.), and the International Award of the SCI, Canadian Section. In 1997, he was named a Fellow of the CIC and in 2002; he was named a Fellow of the Engineering Institute of Canada. In 1996, Bélanger was appointed an Officer of the Order of Canada, and the Prime Minister appointed him to the National Round Table on the Environment and the Economy. Since his retirement from the CCPA, Bélanger has served as a consultant to a number of associations on the subject of product stewardship, voluntary approaches to environmental management, and voluntary approaches as alternatives to regulations. In April 1997, he was asked to take over the Major Industrial Accident Council of Canada as interim chair, having been its original chair from 1988 to 1990. This organization brought together ministries of the federal government, provincial governments, emergency services, and various Canadian industries in a joint effort to promote prevention, preparedness, and response to major industrial accidents. During his career, Bélanger served on the boards of several organizations, such as the Institute for Chemical Science and Technology, the Environmental Science and Technology Alliance of Canada, and the International Trade Advisory Committee (Environment) to the Minister of International Trade of Canada. He served as CIC chair from 2001 to 2002 and was appointed in 2002 as chair of the advisory board to the Institute for Chemical Process and Environmental Technology of the National Research Council Canada.

Clem W. Bowman, HFCIC, O.C. has had extensive private and public sector experience in the development and commercialization of new technologies, providing a foundation for his active role as chair of the Board of ProGrid Ventures Inc. Before starting ProGrid, Bowman was vice-president, Esso Petroleum Canada, founding chair, Alberta Oil Sands Technology and Research Authority, president, Alberta Research Council, and research manager, Syncrude Canada Limited.

Arthur J. Carty, HFCIC, O.C., became National Science Advisor to the Government of Canada after 10 years at the helm of National Research Council of Canada (NRC), Carty holds 5 patents, maintains an active research group at NRC and continues to publish in his field of synthetic chemistry and metallic clusters. He is a former President of the Canadian Society for Chemistry, Honorary Fellow of the Fields Institute for Research in the Mathematical Sciences and a Fellow of the Royal Society of Canada. He has received thirteen honorary degrees from Canadian and foreign universities, is an Officer of the Order of Canada and Officier de l'Ordre national du Mérite of France.

Howard C. Clark, HFCIC, was born in New Zealand. He received his PhD from the University of New Zealand and from Cambridge University in England. He came to Canada to join the faculty at the University of British Columbia in 1957 and was appointed professor in 1964. He moved to the University of Western Ontario as professor of inorganic chemistry and was chair of the chemistry department from 1967–1976. He served as vice-president academic and professor of chemistry from 1976–1986 at the University of Guelph. From 1986 through 1995, Clark was president and vice-chancellor at Dalhousie University.

Norman Epstein, HFCIC. Internationally respected as one of the top chemical engineers, it was only a matter of time before Epstein became an Honorary Fellow. Famed for major advances in such areas as fouling, fluid-particle dynamics and his pioneering research on spouted beds and heat transfer. He was editor of the *Canadian Journal of Chemical Engineering*.

Ronald J. Gillespie, HFCIC, along with his group has made many significant and original contributions to chemistry with the discovery of the superacids and valence-shell electron-pair repulsion theory of molecular structure. He has made a unique contribution to the teaching of chemistry at all levels, especially the introductory level.

John C. Polanyi, HFCIC, O.C., was the recipient of the 1986 Nobel Prize in Chemistry for his work on the dynamics of chemical elementary processes. Throughout his career he has made lasting contributions to the field of chemical reaction dynamics. Born and raised in England, Polanyi obtained a BSc in 1949 and a PhD in 1952 from the University of Manchester. Following his studies, he became a postdoctoral fellow at the National Research Council of Canada laboratories in Ottawa and then a research associate at Princeton University. In 1956, he began his career as a professor at the University of Toronto. Polanyi played an active role in many organizations: Member of the Board of the Ontario Laser and Lightwave Research Centre; Member of the Board of the Steacie Institute for Molecular Sciences, National Research Council Canada; Member of the Science Advisory Board, Max Planck Institute for Quantum Optics, Germany; Honorary Consultant to the Institute for Molecular Science in Okazaki, Japan; President of the Canadian Committee of Scientists and Scholars; Member of the American Academy of Arts and Science Committee on International Security Studies; and Member and Advisor to the Board of the Canadian Centre for Arms Control and Disarmament. In addition to the Nobel Prize, Polanyi received a number of awards and honours, such as the Henry Marshall Tory Medal of the Royal Society of Canada, the Wolf Prize in Chemistry, the Izaak Walton Killam Memorial Prize, the Royal Medal of the Royal Society of London, and the John C. Polanyi Lecture Award of the Canadian Society for Chemistry. Polanyi has also received numerous honorary degrees from universities in Canada, England, Israel and Italy. He is a Fellow of the Royal Society of

Canada, an Honorary Fellow of the Royal Society of Chemistry of the UK. Polanyi is also a member of the Queen's Privy Council for Canada, an Officer of the Order of Canada and a Companion of the Order of Canada.

William G. Schneider, HFCIC, began work at the National Research Council Canada in 1946 as head of the general physical chemistry section of the Division of Chemistry. He became President of the NRC in 1967 until his retirement in 1980. He has won international recognition for his contributions to the study of intermolecular forces and molecular properties. His work in high resolution proton magnetic resonance has resulted in important contributions to structural chemistry, proton exchange behaviour and hydrogen bonding. He is a fellow of the Royal Society of London, the Royal Society of Canada and the CIC. He won the CIC Medal, Montreal Medal and the Henry Marshall Tory Medal. He has also won honorary degrees from several Canadian universities.